DEVELOPMENT AND EVALUATION OF AN AUDIO-VISUAL
TRAINING PROCEDURE FOR FOOD SERVICE EMPLOYEES

by

NADINE LILLIAN APLEY

B. S., Kansas State University,
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Approved by:

Grace M. Shugart

Major Professor

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INTRODUCTION

Labor is a major expenditure in the food service budget, with 25 to 50 per cent of the income allocated to salaries and wages (West et al., 1966). The exact percentage depends on the type of food service, local wage rates, and other management factors.

A good training program, essential for high level performance and maximum production from each employee, is an important factor in controlling labor costs, Expenditure of time and money for planning, conducting, and reviewing training procedures may appear high. However, poor instructional methods or lack of an organized training program may cost the employer in terms of wages paid to employees who are not producing at the highest level. Employers, then, should be interested in using the best available training procedure for maximum return from each training dollar.

One approach to the problem of food service employee training is automated instruction in which material is presented in a series of small, easily understood steps through some auto-instructional device. Automated methods have been used in other industries with resultant savings in training time per worker. If training procedures involving automated instruction were shown to be effective in a food service setting, supervisory time required for training could be reduced.

Many auto-instructional devices are available, ranging from programmed texts to complex systems involving electronic

computers. Selection of the device used is dependent in part on the goals of the program.

The difference between goals associated with general education and those more closely identified with training must be recognized. Training and education are both part of the teaching process (Glaser, 1962). Training has as its goal a uniformity in final behaviors of all subjects that can be specified and observed. For example, a banquet waitress can be trained to serve a dinner plate from the left side of the guest. End results of this training are recognizable each time a banquet plate is served. Behaviors resulting from education are more difficult to specify precisely. A food service employee might be expected to add to his store of knowledge from a lecture on sanitation. Behaviors that might result from this lecture could be singular to a particular person, too complex to specify clearly, or even unknown.

Many potential benefits could be realized from the use of auto-instructional training procedures for food service employees. Each worker would receive identical instructions in the same way, avoiding possibility of errors in presentation or omission of any part of the training. Employees could proceed at their own rate. Instructions could be scheduled at a time during the work period most convenient to both management and the employee. A person below the supervisory level could conduct the training procedure, thus freeing supervisory time for other duties.

Auto-instructional training procedures can be especially helpful when instructing food service employees in repetitive

tasks, in areas in which there is a high rate of employee turnover, or where extensive use of extra help is needed, as for banquet service. There are many repetitive tasks involved in each food service position. The programs could be used over and over to train new employees in these tasks.

Auto-instructional training procedures can be used to retrain employees when necessary without additional supervisory time. For instance, an employee might be asked to repeat the training procedure six months after the initial session to regain any forgotten skills.

Initial preparation of any auto-instructional procedure is time-consuming. Consultation with persons skilled in teaching may be required both to program the training procedures and to pre-test the program for clarity and information content. However, multiple use of the program in training new and present employees plus retraining should offset to some degree the initial cost in time and money. An auto-instructional training program could be used to advantage by multi-unit food service organizations or could be developed for loan or rental.

The purpose of this study was to develop and evaluate an audio-visual employee training program for table setting and for selected portions of banquet service at the K-State Union, Kansas State University.

REVIEW OF LITERATURE

Training and Education

If learning involves adjustment to environmental situations,
a constant modification of behavior is necessary to enable the
individual to adjust to changing life conditions. Formal attempts
at modifying human behavior can be broken into two categories,
training and education, according to Glaser (1962). As two com-
ponents of the teaching process, they are not necessarily mutually
exclusive but there is a difference. Training has as its goal a
uniformity in final behaviors of all subjects that can be speci-
fied and observed. Behaviors resulting from education are more
difficult to specify precisely. They may be singular to a par-
ticular person, may be too complex to specify clearly, or may be
unknown.

General education, according to Smith (1955), refers to
those items learned that do not relate directly to the immediate
job. Training refers to that phase of learning dealing with an
employee's specific job. Smith commented that most industrial
organizations follow the training approach in their formal learn-
ing programs. Effective principles of training were listed as:

1. Adequate training goals must be defined.

2. The trainee must be motivated to learn.

3. Realistic practice principles must be emphasized, as
   meaningful material is learned faster and retained
   longer than information unrelated to an actual
   situation.

4. Learned behavior must be rewarded.

5. Training must be evaluated so that it can lead to further improvement in the program.

Theories of Learning. In their discussion of learning theories, Merry and Merry (1958) stated that motivation is considered important and there is agreement that learning is not a mechanical process in itself.

Griffin (1959) observed that training that imparts skills without accompanying value changes will lead only to disappointment.

Glaser (1962) and Miller (1962) advanced the theory that learning experiences begin with the subject's initial behavior and result in modifications of that behavior. Brethower et al. (1964) stressed "Every program is designed to change some specific behavior."

Miller (1962) believed that psychologists lack a behavioral classification system to use in defining components of task performances. Such a system would enable the task analyst and training designer to find a common ground in the psychological research literature.

Laws of learning are not always applicable to operational training problems, as noted by Fleishman (1962). One of the main reasons is lack of understanding of the learning process itself, especially in complex performances. He found that the design of training programs for complex skills ordinarily involves a combination of "expert judgment" and known principles of learning with emphasis on the use of commonplace terminology and procedures.

Learning, as related to instructional training, was studied by Glaser (1962). He stated that at the beginning of the learning sequence, subject matter stimuli are used to evoke responses that are already in the initial fund of learning brought by the trainee to the learning situation. The desired modification in behavior comes about when transfer of responses to new stimuli occurs and new or extended responses are brought under new stimulus control.

Student Responses. Two classes of responses, as stated by Lumsdaine (1962), are overt and covert. Overt responses are those that can readily be observed. Covert responses are those made by the individual mentally and cannot be observed. Covert responses occur, for example, when one reads a book, listens to a lecture, or sees a film without making an observable response. Michael and Macoby (1961), in their study of "Factors Influencing Effects of Student Participation in Verbal Learning Film," found no significant difference between level of learning with overt practice as compared with the use of covert responses. Both types were equally effective.

Manipulative training by audio-visual methods generally involves an overt response, as mentioned by Kimble and Wulff (1961). Research by Kanner and Sulzer (1961) showed covert response to be effective as also was found in the Michael and Macoby study mentioned earlier. Kanner and Sulzer (1961) believed the use of covert response could find wide application in programmed instruction. Such audio-visual instruction procedures could be modified to involve, initially at least, covert mental

responses to the operation instructions. These would be given
in sequence without opportunity or expectation of immediate
physical response.

Reinforcement and Recall. The concept of reinforcement in
a program of instruction was defined by Glaser (1962) as that
acquired from a contingent relationship between the response of
an organism and a consequent event. When a response is strength-
ened by reinforcement, its probability of recurrence is increased.
Reinforcement is given the student in the usual classroom pro-
cedure as knowledge of results. In programmed instruction,
this reinforcement is given the trainee when he makes a response
on a teaching machine. Thus, both the usual classroom procedure
and programmed instruction seek to increase the probability of
recurrence of the correct response. A delay in reinforcement
can result in little or no learning.

Recall of learning is classified by Glaser (1962) as short
term and long term. Short-term recall is that which is needed
to complete a specific task on a particular occasion soon after
learning takes place. Long-term recall refers to memory of
stimulus-response relationships applicable to virtually any
occasion at a later time on which the task is performed. Long-
time recall is better if one step directly leads to the next
step in an orderly fashion in the training program. If the
stimulus-response combinations are not in an orderly sequence,
recall is more difficult.

Automated Instructional Methods

Automated instructional methods were defined by Lumsdaine (1959) as "any means whatever by which the functions of a teacher in guiding or mediating the process of a student's learning are encoded so they can be removed or extended in time and space and reduplicated as desired." Wiley (1966) stressed controlled presentation, calling forth an appropriate response, guidance in subject matter, and control of manner in which learning proceeds in his definition of auto-instructional methods. Wiley also mentioned programmed learning as a term sometimes used synonymously in reference to a broader understanding of auto-instructional methods. Lysaught and Williams (1963) believed that the entire process of program construction, presentation, and participation by the subject is included in the term "auto-instructional methods."

Teaching Machines. An upsurge in interest by educators in teaching machines and other related techniques was noted by Lumsdaine (1959). He stated that automation as applied to teaching does not remove control from the human, but this control is encoded so that it can be reduplicated. The only intellect that machines or other such devices can display is programmed into them by human intellect.

Lumsdaine (1960) defined criteria for a teaching machine:

1. Continuous active student response is required, providing explicit practice and testing of each step of what is to be learned.

2. A basis is provided for informing the student with minimal delay whether each response he makes is correct, leading him directly or indirectly to correction of errors.

3. The student proceeds on an individual basis at his own rate.

Importance of the teaching machine as an auto-instructional device was pointed out by Lumsdaine (1962). He further noted that teaching machines and visual aid instruments are overlapping entities. Visual or audio aids, in the form of pictures, graphs, or tape recordings generally are used as adjuncts to other teaching activities, while teaching machines provide instruction that has been programmed into them.

A teaching machine was introduced as a method of instructing food service employees in food sanitation at the University of Missouri Medical Center (Carter, 1963). In a continuation of the study, Carter et al. (1964) tested the effectiveness of this type of instruction with one control and one experimental group of 34 employees each. The control group received no formal instruction, and the experimental group was instructed by the teaching machine. The extent of learning was statistically significant in the experimental group. Effectiveness of the program was determined by comparison of mean pre- and post-test scores within each group and between the two groups. Learning was retained for at least one week.

In a preliminary study to test the use of teaching machines, McDonald and Kaufman (1963) found the teaching machine, an Autotutor Mark II, to be an effective instrument for patient instruction in diabetes. Out of randomly selected sample of 184 patients

with diabetes, 106 took part in the study. Each subject was given a diabetes information quiz, a vocabulary sub-test of Wechsler Intelligence Scale to estimate intelligence quotient, and a reading skill test to determine grade level of skill before and after completing the program.

Audio-Film Instruction. Kimble and Wulff (1961) reported that audio-visual types of training often develop some system of demonstrations that are alternated with periods of practice requiring an overt response. This demonstration, stop, and practice combination is not always of benefit to the trainee, as shown by their study. In a film study by Kimble and Wulff (1961) in which two techniques of audience participation were used, some forms of student participation were found to be superior to others. One technique involved a guided response so that the subject made only correct or nearly correct responses; the other allowed the student to attempt the right answers or responses without guidance. Evidence in this study clearly favored the guided response. Kimble and Wulff (1961) further stated, "The benefits of guided participation can be accounted for almost entirely in terms of elimination of common mistakes, the practicing of which this particular guidance technique was designed to prevent."

Roshal (1961), in a study of film instruction, found that tying knots while watching a film did not improve learning speed. Divided attention between watching the instruction film and the actual tying of the knots seemed to conflict.

Realistic film portrayals of motor skill task performance tend to present information at a rate in excess of the receptive capacity, according to McGuire (1961). He utilized both a regular speed and a slow motion technique in training subjects to perform a simple motor skill. The portion presented in slow motion was linked with improved learning, while that part given at regular speed was connected with reduced learning.

Margolius and Sheffield (1961), in working with audio-film types of training, found that alternated demonstration and performance was best, and that there was an optimum length for each demonstration-performance span.

Moving film demonstration alternated with periods of overt practice in training for lengthy, mechanical assembly operations was described by Margolius, Sheffield, and Macoby (1961). Insertion of practice at what seemed to be ends of natural units was studied, as well as equal time-spaced introductions of practice periods, with no significant difference in results.

Audio-Slide Instruction. Training through use of an audio-slide device has been reported in several studies. Roshal (1961) included comparison between motion pictures and slides in his study of knot-tying. Motion pictures were significantly better for his program than were slides. He further stated that the most important consideration for simple tasks, regardless of device used, might well be the accurate representation of the product of the perceptual-motor skill. The simplicity of a task may be shown in small segments with accurate representation of the skills required in each segment.

Lumsdaine (1959) used a start-and-stop projector as an automated demonstrator for teaching procedural skills for on-the-job training for laboratory technicians. An individual daylight-viewing projector that could be started and stopped almost instantaneously at the beginning and end of each demonstration segment was used. Units of a procedure could be developed in accordance with the trainee's ability and prior experience. At each step, the trainee could check his performance against the picture, which stayed on the screen until he was ready to proceed to the next step.

A report appearing in American Machinist-Metalworking Manufacturing (1962) described a Videosonic automated training system. This machine presented a predetermined procedure to the trainee using a colored slide display and a coordinated magnetic tape for oral instructions. The system was described as a "packaged" environment for each worker. The trainee controlled the program with a simple set of buttons and knobs similar to those on a television set. The trainee could start, stop, play back, or advance the presentation as desired. Assemblers of a complex guidance system at Hughes Aircraft were reported to have cut time per job from 11 to 4 hours using this device.

In an audi-visual program for kitchen workers at Kansas State University, Middleton and Konz (1965) presented two motion patterns for breading foods. In one, both hands moved in the same direction, while in the other, motions were in opposite directions. Slides and a tape recording were used in a Video-sonic machine. Slides were made so they were self explanatory

and could be used alone, Middleton and Konz concluded that
audio-visual instruction may help solve the always present
problem of training food-service employees.

Visual Instruction. Kahl (1968) developed two visual in-
struction methods utilizing slides for training unskilled workers
in the use of a flight type dishwashing machine at Kansas State
University. A program of 35 mm. slides showing step by step
preparation of the machine was prepared. Ten subjects currently
employed by the K-State Union, but who were unskilled at the task,
viewed the slides and practiced on the machine. Ten other sub-
jects viewed the slides and recorded answers in a booklet.
Subjects were tested five minutes after completion. Their per-
formance was scored on total number of errors, seconds required
for instruction, and test performance. Fewer errors occurred
and subjects required less time to complete the test in the
method incorporating use of slides and practice on the machine.
However, both methods were considered applicable for training
food service personnel.

Programmed Textbook. A programmed textbook containing step-
by-step instructions plus colored photographs of two food service
tasks was developed by Sumbingo (1967) and tested by 11 employees
at Kansas State University Residence Halls. Effectiveness of the
text was evaluated on the basis of scores on the oral test,
methods agreement, quality, length of performance time, and an
opinionnaire given to the employees. Results showed the appli-
cability of this programmed instruction method for trainees

widely diversified in age, educational attainment, and length of
food service experience.

PROCEDURE

Development of the Program

An audio-visual training procedure for banquet service was
developed for food service employees at the K-State Union,
Manhattan, Kansas. The procedure was divided into two units:
Series I, Setting an Individual Place Cover for a Banquet;
Series II, Serving the Banquet Dinner Plate, Rolls and Coffee.

The study was done in cooperation with members of the faculty
in the Industrial Engineering Department, Kansas State University.

Equipment. A Videosonic Model 202 auto-instructional device
was used for presentation of the procedure. This portable
machine was equipped with a daylight screen for viewing demon-
stration slides, an automatic slide changer, and an audio system
that utilized a tape recording to convey oral instructions. The
tape could be started and stopped by means of a foot control
switch. A cover guide outline (Appendix B), placed on the work
space in front of the machine, enabled the subject to participate
in guided practice during the training sequence. Thus, the
trainee could hear the instructions, see the demonstration slide,
and practice the procedure at the same time.

Task Definition. Tasks involved in the training procedure
were defined and grouped into two units. The first unit, desig-
nated Series I for this study, dealt with spatial relationships

between objects placed on an individual banquet place setting by
the trainee. Series II was concerned with body position and
movements of the banquet waitress during the service of the
dinner plate, coffee, and rolls. Tasks were broken down into an
orderly sequence of small steps. Specific end behaviors desired
of the trainee were determined for each unit. This information
served as a basis for preparation of the script and demonstration
slides.

Script Writing. The second step in planning the training
procedure was development of a script to accompany a series of
illustrative slides for each unit.

Series I script (Appendix B) was concerned first with set-
ting an individual place cover for a banquet, then relating the
single cover to a banquet set-up involving more than one cover.
Description of articles to be shown in the slides; reasons for
correct placement of silverware, glass, dishes, and napkin; and
directions for placing items on the cover guide outline were
included in the script. To assist in the transition from using
a cover guide outline to setting a place cover on a banquet
table, practical suggestions for measurements within the cover
were given.

The script for Series II (Appendix B) included descriptions
of steps in the service of a dinner plate, rolls, and coffee.
Specific directions for serving a banquet guest were given.

A recording of the script for each series was made on
separate tapes and inserted into cartridges. Special attention
was focused on giving instructions in an even, pleasant voice,

at a pace commensurate with time needed for manipulative responses. Directions to "change slide" were given at the end of each description of a demonstration slide. Series I required 13½ minutes and Series II 5 minutes.

Slides. Twenty-three demonstration slides were made for Series I and 15 for Series II. Representative slides from each series appear in Appendix B. The 35 mm. slides illustrated each step outlined in the scripts.

In Series I, important points were emphasized by colored tape, numerals, letters, and arrows. Items to be used with the cover guide by the trainee were shown for positive identification.

For Series II slides, a waitress was shown demonstrating proper procedures for serving a guest. Silhouette "shots" were made of the waitress standing in the proper position behind the guest at the beginning of each section. A front view of the waitress serving the guest illustrated the service procedure, body position, and movements.

Experimental Procedure

Selection of Subjects. Sixteen trainees were selected from current K-State Union food service employees for this study on the basis of criteria set up by the investigator:

1. The employees had not been trained for banquet service but the Food Service Director indicated they met requirements for a banquet worker at the K-State Union.

2. Grade level of formal education was a basis for selection of the group. Of the 16 workers chosen, eight had completed the twelfth grade of formal

education and eight had finished the eleventh grade or less. The average for the first group was 12.13 years of formal education while the average for the second group was 9.25 years.

3. Rating of the worker on the current job, as evaluated by their immediate supervisor and reviewed by the Food Service Director, served as another basis for selection of the training group. Within each sub-group of eight people, as divided by level of education, four had "excellent" ratings and four rated "very good."

4. The age limit for the trainees was set by the investigator to be not less than 30 nor more than 60 years old. The average age of the group with a higher level of education was $47\frac{1}{2}$ years while average age for the second group was 48 years. Information on date of birth, length of tenure in the food service, and ratings was secured from the K-State Union Business office. The job title for each trainee was obtained from the Food Service Director.

5. Employees were not paid additional funds for co-operating in the experiment but took part during regular working hours.

Pre-test. Each employee selected for the project was given a pre-test (Appendix B) to eliminate any worker who already might be proficient in the two areas to be studied. Performance was evaluated by the investigator on a check list (Appendix B).

Presentation of Program. Training sessions were scheduled for each employee during working hours at times convenient for the food service. A brief explanation of the project and instructions in the use of the machine (Appendix B) were given prior to the training session. The employee listened to instructions on the tape recording, viewed the demonstration slides, and placed the silver, glass, napkin, and dishes on the cover guide outline as directed simultaneously. The employee pushed the

slide change button to bring the next slide to the screen when directed.

At the end of the Series I slides, the trainee was asked to go to another table for a tryout performance. The needed items of silverware, dishes, napkin, and glass were arranged in a random fashion at the left side of the table. The trainee was asked to set a banquet place cover as shown in the slide series. Procedure with each trainee was exactly the same.

At the completion of the trial, the table setting was checked for accuracy by the investigator. The same check list (Appendix B) was used for evaluation by the investigator as in the pre-test. The subject did not see the check list at any time. If the trainee scored 100 per cent, training on Series I stopped. If the score was less than 100 per cent, the trainee repeated Series I and was again evaluated by means of the check list until 100 per cent was achieved. After this goal was reached, the trainee progressed to the Series II training procedure. This time the experimenter, sitting in front of the machine with the trainee standing behind her, operated the slide change button. The trainee served the experimenter, who acted as a guest, as shown in the demonstration slides and directed by the tape recording. The trainee was then asked to go to the simulated banquet table on which the correct cover, as set for Series I, remained. The employee was asked to serve a dinner plate, a basket of rolls, and coffee to the experimenter. This service was evaluated after the performance by means of the Series II check list (Appendix B) used for the pre-test. As before, the

trainee was not allowed to see the check list. Training was
stopped when the employee scored 100 per cent.

The time required for each employee to complete training and
testing for both series was recorded.

Retention of Information. Retention of information learned
by the trainee during both series was tested after the training
session, at the end of one week, and again in two weeks. A
banquet cover, with the same items used in the training procedure,
was set in the same way by the employee and evaluated as for the
pre-test and test. In a similar manner, the service of the
dinner plate, rolls, and coffee was evaluated.

RESULTS AND DISCUSSION

Series I

Of the 16 trainees in this study, only one achieved 100 per
cent efficiency following the initial viewing of the slides
(Table 1). Seven employees completed the procedure twice and
six three times. The remaining two subjects required a total of
four replications to achieve 100 per cent competence. There did
not appear to be a close relationship between pre-test score and
required replications of the training procedure. Trainee A had
25 per cent correct on the pre-test yet needed to participate in
the training only one time. Those who participated twice had
pre-test scores ranging from 15.6 to 51.1 per cent correct.
Those requiring three replications had pre-test score percentages
ranging between 25.0 and 46.9. The two trainees requiring four

Table 1. Pre-test scores and training replications. Series I.

| Test subject : | Pre-test score[a] | | Training replications[b] |
	No. correct :	% correct :	
A	8	25.0	1
G	17	53.1	2
C	14	43.8	2
E	14	43.8	2
D	11	34.4	2
B	9	28.1	2
H	8	25.0	2
F	6	15.6	2
K	15	46.9	3
I	13	40.6	3
P	12	37.5	3
J	12	37.5	3
M	9	21.9	3
L	8	25.0	3
O	10	31.3	4
N	9	21.9	4

[a] Total score = 32.
[b] No. replications required to score 100%.

replications had scores of 21.9 and 31.3 per cent correct in the pre-test.

Table 2 shows by individual item in the pre-test and in each successive replication the number of employees successfully completing the training procedure. Item numbers in the first column correspond with those on the Series I Check List (Appendix B). Areas of difficulty are indicated by scores on individual items. For example, item 2 (1" measurement between bottom edge of cover and table edge) and item 31 concerning the relationship of the water glass to the salad bowl and bread and butter plate proved difficult for the group. Others, such as item 13

Table 2. Number of employees with correct response for each item
of the training procedure. Series I.

Item No.	Pre-test No.	%	1 No.	%	2 No.	%	3 No.	%	4 No.	%
1	1	6.3	4	25.0	15	100.0	8	100.0	2	100.0
2	1	6.3	7	43.8	11	73.7	6	75.0	2	100.0
3	2	12.5	14	87.5	15	100.0	7	87.5	2	100.0
4	14	87.5	16	100.0	15	100.0	8	100.0	2	100.0
5	10	62.5	14	87.5	15	100.0	8	100.0	2	100.0
6	13	81.3	16	100.0	15	100.0	8	100.0	2	100.0
7	1	6.3	10	62.5	15	100.0	8	100.0	2	100.0
8	14	87.5	16	100.0	15	100.0	8	100.0	2	100.0
9	1	6.3	13	81.3	15	100.0	8	100.0	2	100.0
10	4	25.0	15	93.8	15	100.0	8	100.0	2	100.0
11	0	0.0	13	81.3	15	100.0	8	100.0	2	100.0
12	2	12.5	7	43.8	10	67.0	8	100.0	2	100.0
13	16	100.0	16	100.0	15	100.0	8	100.0	2	100.0
14	11	68.8	15	93.8	14	93.8	8	100.0	2	100.0
15	9	56.3	12	75.0	15	100.0	8	100.0	2	100.0
16	12	75.0	14	87.5	15	100.0	8	100.0	2	100.0
17	2	12.5	14	87.5	15	100.0	8	100.0	2	100.0
18	15	93.8	16	100.0	15	100.0	8	100.0	2	100.0
19	1	6.3	4	25.0	14	93.8	8	100.0	2	100.0
20	8	50.0	15	93.8	15	100.0	8	100.0	2	100.0
21	11	68.8	16	100.0	15	100.0	7	87.5	2	100.0
22	3	18.8	13	81.3	14	93.8	7	87.5	2	100.0
23	2	12.5	11	68.8	12	80.4	7	87.5	2	100.0
24	0	0.0	5	31.3	11	73.7	8	100.0	2	100.0
25	4	25.0	13	81.3	14	93.8	8	100.0	2	100.0
26	3	18.8	15	93.8	15	100.0	8	100.0	2	100.0
27	0	0.0	8	50.0	13	87.1	8	100.0	2	100.0
28	2	12.5	10	62.5	14	93.8	8	100.0	2	100.0
29	1	6.3	11	68.8	12	80.4	8	100.0	2	100.0
30	5	31.3	16	100.0	15	100.0	8	100.0	2	100.0
31	0	0.0	6	37.5	13	87.1	7	87.5	2	100.0
32	1	6.3	5	31.3	12	80.4	8	100.0	2	100.0

No. trainees 16   16   15   8   2

(the tines of the fork are up), were less difficult. Item 18
(bowl of the spoon up) also was easy for the group.

In Table 3, training time per item learned during all replications is shown. Individual times ranged from 34 seconds per item learned for the single trainee who reached 100 per cent efficiency in one replication to 147 seconds per item for one of the employees requiring four replications.

Pre-test scores showed a total of 170 known items, rising to 211 after the first participation. An additional 99 items were learned after the second replication, 25 in the third, and 7 in the fourth replication.

Retention of information learned was checked at the end of one day, one week, and two weeks after the initial learning session (Table 4). Trainee performance in setting a banquet cover was scored by the same check list used in the pre-test and training sessions. Fifteen of the 32 items were retained during the three retention checks by everyone. Item 24 ($1\frac{1}{2}$" measurement between tip of dinner fork and edge of bread and butter plate) was retained by the smallest number of employees at the end of two weeks. This item was recalled correctly by 87.5 per cent of the trainees at the end of one day and one week. This percentage dropped to 68.8 at the end of two weeks. Another item, dropping from 93.8 per cent for one day to 75.0 per cent for one week and two weeks, concerned overall measurement of the cover (Item 1). At least 80 per cent of the trainees recalled all other items. Average percentages of recall were 96.5 for one day, 96.3 for one week, dropping to 92.8 at the end of two weeks.

Table 3. Average training time, in seconds per item, for each trainee. Series I.

Test subject	Pre-test: No. items correct of possible: 32	Replications								Total no. training in sec.	Total items learned	Av. time required during training sec./item	Individual average sec./item
		1		2		3		4					
		No. items learned	Av. sec./item	No. items learned	Av. sec./item	No. items learned	Av. sec./item	No. items learned	Av. sec./item				
A	8	24	34							810	24	34	34
F	5	15	54	12	68					1620	27	60	60
H	8	11	74	13	62					1620	24	68	68
B	9	17	48	6	135					1620	23	70	70
D	11	14	58	7	116					1620	21	77	77
C	14	11	74	7	116					1620	18	90	90
E	14	15	54	3	270					1620	18	90	90
G	17	7	116	8	101					1620	15	108	108
M	7	12	68	9	90	4	203			2430	25	97	97
L	8	16	51	3	270	5	162			2430	24	101	101
P	12	14	58	3	135	3	270			2430	20	122	122
J	12	11	74	6	203	3	270			2430	20	122	122
I	13	12	68	4	203	3	270			2430	19	128	128
K	15	13	63	2	405	2	405			2430	17	143	143
N	7	10	81	9	90	4	203	2	405	3240	25	130	130
O	10	9	90	7	116	1	810	5	162	3240	22	147	147

Average for all subjects   99.2

Table 4. Retention of information by trainees at the end of one day, one week, and two weeks. Series I.

Item no.[a]	Trainees recalling items					
	1 day		1 week		2 weeks	
	No.[b]	%	No.	%	No.	%
1	15	93.8	12	75.0	12	75.0
2	15	93.8	15	93.8	13	81.3
3	16	100.0	16	100.0	16	100.0
4	16	100.0	16	100.0	16	100.0
5	14	87.5	14	87.5	16	100.0
6	16	100.0	16	100.0	16	100.0
7	16	100.0	16	100.0	16	100.0
8	16	100.0	16	100.0	16	100.0
9	16	100.0	16	100.0	15	93.8
10	16	100.0	16	100.0	16	100.0
11	16	100.0	16	100.0	15	93.8
12	13	81.3	15	93.8	15	93.8
13	16	100.0	16	100.0	16	100.0
14	16	100.0	16	100.0	16	100.0
15	14	87.5	14	87.5	16	100.0
16	16	100.0	16	100.0	16	100.0
17	15	93.8	16	100.0	16	100.0
18	16	100.0	16	100.0	16	100.0
19	15	93.8	16	100.0	16	100.0
20	16	100.0	16	100.0	16	100.0
21	16	100.0	16	100.0	16	100.0
22	16	100.0	16	100.0	15	93.8
23	15	93.8	15	93.8	14	87.5
24	14	87.5	14	87.5	11	68.8
25	16	100.0	16	100.0	15	93.8
26	16	100.0	16	100.0	16	100.0
27	16	100.0	15	93.8	15	93.8
28	16	100.0	16	100.0	16	100.0
29	14	87.5	14	87.5	15	93.8
30	16	100.0	16	100.0	16	100.0
31	16	100.0	16	100.0	13	81.3
32	14	87.5	13	81.3	14	87.5
Average		96.5		96.3		92.8

[a] Item description listed on Series I check list (Appendix B).

[b] No. trainees = 16.

Series II

Fifteen of the 16 employees achieved 100 per cent efficiency following initial viewing of the slides in Series II (Table 5). Only one trainee required two replications. The percentage correct in the pre-test for the group requiring one replication ranged from 17.1 to 77.1. This is a difference of 60 per cent between high and low percentages. The one trainee who required two training replications had one of the higher pre-test percentages at 68.6.

Table 5. Pre-test scores and training replications. Series II.

Test subject	Pre-test score[a]		Training replications[b]
	No. correct	% correct	
L	27	77.1	1
I	26	74.3	1
K	24	68.6	1
H	24	68.6	1
F	23	65.7	1
M	23	65.7	1
G	22	62.9	1
N	21	60.0	1
D	20	57.1	1
J	16	45.7	1
B	13	37.1	1
C	13	37.1	1
E	10	28.6	1
O	9	25.7	1
A	6	17.1	1
P	24	68.6	2

[a] Total score = 35.
[b] Required to score 100 per cent.

The number of employees successfully completing each segment of the training procedure is given in Table 6. Item numbers

correspond to those in the Series II check list (Appendix B).
Items 8 (the plate so positioned on cover that the K-State print
is at the top, away from the guest) and 31 (waitress does not
spill any coffee) were the two causing the lone trainee to require
a second viewing of the slides. The fact that the trainee did
spill coffee during the test period could have been due to
nervousness within the testing situation.

Individual average training time per trainee for this series
ranged from 10 seconds per item learned to 92 seconds (Table 7).
Average training time for all trainees was 25.3 seconds per item.
Six trainees were within the range of 10 to 19 seconds, while
seven were between 20 and 29 seconds. Two were in the 30 to 39
second range while trainee P required 92 seconds per item learned.

Table 8 presents retention of information by item at one
day, one week, and two week periods. Twenty-nine of the 35 items
in this series were retained for the three periods. Average
recall for all employees for all three periods was 99.3, 99.6,
and 98.5 per cent. With item 4 (waitress holds plate so that
thumb is not over rim of plate), there was 93.8 per cent reten-
tion for one day and for one week, dropping to 81.3 per cent for
the two-week period. One person forgot to turn to the right
(Item 13) after one day, all 16 remembered this step after one
week, then three trainees performed incorrectly after two weeks.
All other items were recalled by at least 90 per cent of the
trainees.

Table 6. Number of employees with correct response for each item of the training procedure. Series II.

	Number of trainees with correct response					
	Pre-test		Replications			
			1		2	
Item no.	No.	%	No.	%	No.	%
1	15	93.8	16	100.0	1	100.0
2	3	18.8	16	100.0	1	100.0
3	10	62.5	16	100.0	1	100.0
4	3	18.8	16	100.0	1	100.0
5	8	50.0	16	100.0	1	100.0
6	7	43.8	16	100.0	1	100.0
7	13	81.3	16	100.0	1	100.0
8	7	43.8	15	93.8	1	100.0
9	8	50.0	16	100.0	1	100.0
10	6	37.5	16	100.0	1	100.0
11	3	18.8	16	100.0	1	100.0
12	4	25.0	16	100.0	1	100.0
13	3	18.8	16	100.0	1	100.0
14	16	100.0	16	100.0	1	100.0
15	6	37.5	16	100.0	1	100.0
16	13	81.3	16	100.0	1	100.0
17	11	68.8	16	100.0	1	100.0
18	11	68.8	16	100.0	1	100.0
19	14	87.5	16	100.0	1	100.0
20	3	18.8	16	100.0	1	100.0
21	8	50.0	16	100.0	1	100.0
22	8	50.0	16	100.0	1	100.0
23	4	25.0	16	100.0	1	100.0
24	16	100.0	16	100.0	1	100.0
25	9	56.3	16	100.0	1	100.0
26	12	75.0	16	100.0	1	100.0
27	11	68.8	16	100.0	1	100.0
28	11	68.8	16	100.0	1	100.0
29	12	75.0	16	100.0	1	100.0
30	8	50.0	16	100.0	1	100.0
31	10	62.5	15	93.8	1	100.0
32	10	62.5	16	100.0	1	100.0
33	7	43.8	16	100.0	1	100.0
34	5	31.3	16	100.0	1	100.0
35	11	68.8	16	100.0	1	100.0
No. trainees	16		16		1	

Table 7. Average training time, in seconds per item, for each trainee. Series II.

Test subject	Pre-test: No. items correct of possible 35	Replications 1: No. items learned	Replications 1: Av. no. sec./item	Replications 2: No. items learned	Replications 2: Av. no. sec./item	Total training time required in sec.	Total no. items learned during training	Individual average dec./item
A	6	29	10			300	29	10
E	10	25	12			300	25	12
O	10	25	12			300	25	12
B	13	22	14			300	22	14
C	13	22	14			300	22	14
J	16	19	16			300	19	16
D	20	15	20			300	15	20
M	21	14	21			300	14	21
N	21	14	21			300	14	21
G	22	13	23			300	13	23
P	23	12	25			300	12	25
H	24	11	27			300	11	27
K	24	11	27			300	11	27
I	26	9	33			300	9	33
L	27	8	38			300	8	38
P	24	9	33	2	150	600	11	92
Average for all trainees								25.3

Table 8. Retention of information by trainees at the end of one
day, one week, and two weeks. Series II.

| Item no.[a] | Trainees recalling items | | | | | |
| | 1 day | | 1 week | | 2 weeks | |
	No.	%	No.	%	No.	%
1	16	100.0	16	100.0	16	100.0
2	16	100.0	16	100.0	16	100.0
3	16	100.0	16	100.0	16	100.0
4	15	93.8	15	93.8	13	81.3
5	16	100.0	16	100.0	15	93.8
6	16	100.0	16	100.0	16	100.0
7	16	100.0	16	100.0	16	100.0
8	16	100.0	16	100.0	16	100.0
9	16	100.0	16	100.0	16	100.0
10	16	100.0	16	100.0	16	100.0
11	16	100.0	16	100.0	16	100.0
12	16	100.0	16	100.0	16	100.0
13	15	93.8	16	100.0	14	87.5
14	16	100.0	16	100.0	16	100.0
15	16	100.0	16	100.0	16	100.0
16	16	100.0	16	100.0	16	100.0
17	16	100.0	16	100.0	16	100.0
18	16	100.0	16	100.0	16	100.0
19	16	100.0	16	100.0	16	100.0
20	16	100.0	16	100.0	16	100.0
21	16	100.0	16	100.0	15	93.8
22	16	100.0	16	100.0	16	100.0
23	15	93.8	16	100.0	16	100.0
24	16	100.0	16	100.0	16	100.0
25	16	100.0	16	100.0	16	100.0
26	16	100.0	16	100.0	16	100.0
27	16	100.0	16	100.0	16	100.0
28	16	100.0	16	100.0	16	100.0
29	16	100.0	16	100.0	16	100.0
30	16	100.0	16	100.0	16	100.0
31	16	100.0	16	100.0	16	100.0
32	16	100.0	16	100.0	16	100.0
33	16	100.0	16	100.0	16	100.0
34	16	100.0	16	100.0	16	100.0
35	15	93.8	15	93.8	15	93.8
Average		99.3		99.6		98.5

[a] Item description listed on Series II check list (Appendix
B).

Employee Reaction to Training Procedures

Although most of the employees were somewhat nervous when beginning the training procedure, all quickly adjusted and visibly relaxed as they became accustomed to the machine. Pride in being selected for the "new" instruction was evident. Several women dressed in their best clothes to go from the Union to the building where the training took place.

Comments from all trainees were favorable. One woman, indicating that a great deal of information was presented in the slides, planned to show the local church women's group the skills she had learned. She felt they would be useful in church banquet service. Another trainee mentioned that she was going to show her daughter that night what she had learned. Many trainees mentioned that the program was "clear" and "easy to follow and understand." One employee commented that the program would be useful in supplementing supervisory training time.

Observation during Series I revealed that the trainee listened to instructions, then placed articles on the cover guide outline as directed. She then checked back and forth between the slide illustration and her own work, thus checking her progress. In Series II, however, trainees were noticed placing an article such as the dinner plate in service shortly before they were instructed by the voice recording.

In both series, the trainees were able to quickly find articles located at the left of the cover guide outline.

Several employees were confused by an illustration in which the bread and butter plate appeared to be touching the napkin in Series I. They tended to place these two articles so one touched the other. Specific mention was not made in the taped instructions because napkins vary in size and shape. Reaction of the employees indicated the importance of clear visual illustrations.

One trainee forecast the use of this training technique in many other food service areas.

SUMMARY

Labor is a major expenditure for the food service employer. It represents 25 to 50 per cent of the food service budget. As a result, the employer is faced with the problem of training competent, efficient employees with minimum expenditure of time and money. A good training program is an important factor in controlling labor costs.

Automated instruction is one approach to the training problem. Automated methods have been used in industry with resultant savings in training time required per worker. Repetitive, routine tasks within a food service lend themselves to this type of training. Training goals embodied in the programs are specific behaviors measurable at any given time.

An audio-visual training procedure was developed in cooperation with members of the faculty in the Industrial Engineering Department, Kansas State University, for food service employees at the K-State Union, Manhattan, Kansas. The procedure was

divided into two units. Series I, Setting an Individual Place Cover for a Banquet, stressed spatial relationships between objects placed on the cover. Series II, Serving the Banquet Dinner Plate, Rolls, and Coffee, emphasized body position and movements.

A portable Videosonic audio-visual machine equipped with a daylight screen for viewing demonstration slides, an automatic slide changer, and an audio system that utilized a tape to convey oral instructions was used for presentation of the procedure. A cover guide outline on the work table in front of the trainee facilitated participation in guided practice by enabling the trainee to hear instructions, see the demonstration slide, and do the procedure at the same time.

Sixteen untrained workers acceptable for banquet service were selected for the study from current K-State Union food service employees. Eight had completed the twelfth grade or above (12.13 average) and eight had finished the eleventh grade or less (9.25 average). Within each sub group of eight employees, four had performance ratings of "excellent" while four were rated "very good." Ages ranged from not less than 30 to not more than 60 years of age for an average of 47.75 years.

The Series I pre-test covering material in the procedure was given each trainee. A brief project explanation and instruction in use of the machine followed. The employee simultaneously listened to tape-recorded instructions, viewed demonstration slides, and placed articles on the cover guide outline as

directed. After each viewing, the trainee was asked to set a
test cover. Performance was measured by means of the Series I
check list by the investigator. When 100 per cent efficiency
was reached, Series II training and testing was begun. Retention
of information was checked at the end of one day, one week, and
two weeks for both series.

Of the 16 trainees in the study, one achieved 100 per cent
efficiency after the initial viewing of the Series I slides,
seven trainees required two replications, six needed three rep-
lications, while the remaining two trainees required four repli-
cations. The percentage correct in the pre-test ranged from 15.6
to 53.1. A close relationship did not appear to exist between
pre-test score and replications required. Tasks requiring
placement of objects a set distance from one another proved more
difficult than those relating to the way a specific object was
positioned on the cover.

Training time per response learned during all replications
ranged from 34 to 147 seconds in Series I for an average of 99.2
seconds. Fifteen of the 32 items in Series I were retained. No
less than 80 per cent of the trainees recalled all other items.
Average percentage recalled at one day was 96.5; one week, 96.3;
dropping to 92.8 at two weeks.

Fifteen of 16 trainees achieved 100 per cent efficiency
following initial viewing of Series II slides. One trainee
required two replications. Percentage correct in the pre-test
ranged from 17.1 to 77.1. The lone employee requiring two

replications had a pre-test score of 68.6 per cent. Average training time per response learned in Series II ranged from 10 to 92 seconds, with an average of 25.3. Twenty-nine of the 35 items were retained. All other items were recalled by at least 90 per cent of the trainees. Average percentage recall was 99.3 at one day, 99.6 at one week, and 98.5 at two weeks.

Employees reacted favorably to the training procedure and there was evident pride in being chosen to participate. Many suggested other uses for the information gained. One woman could foresee use of this training by automation in other food service areas.

RECOMMENDATIONS

The present investigation was undertaken to determine the feasibility of using auto-instructional training procedures for food service employees. Within the scope of this study, the following recommendations may be made:

1. Test the validity of the assumption growing out of this study that a program designed to stress relationships of objects within a framework may be more difficult for trainees to master than a program designed to stress body movements.

2. Develop guidelines for use in:

    a. Preparing program pre-tests.
    b. Photographing training slides.
    c. Preparing scripts.

3. Enlarge series on banquets to include all facets of serving, clearing, and cleaning.

4. Develop programs for procedures used in other food service areas.

On the basis of the results of this study and the enthusiasm of trainee participants, this method of training appears to merit consideration.

ACKNOWLEDGMENT

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APPENDIX A

Table 9. Information pertaining to trainees related to pre-test score and number of training replications required for 100 per cent proficiency. Series I.

Test subject	Pre-test score No.	Pre-test score %	Formal education (grade)[a]	Age	Pro-ficiency ratings[b]	No. months on the job	Area of current employment	Replications needed to attain 100% proficiency
A	8	25.0	11	37	E	55	cashier	1
B	9	28.1	12	51	B	26	counter server	2
C	14	43.8	12	56	B	76	salads	2
D	11	34.4	12	52	VG	12	counter server	2
E	14	43.8	12	38	VG	17	snack bar	2
F	6	15.6	11	47	VG	85	vegetables	2
G	17	53.1	11	48	E	67	vegetables	2
H	8	25.0	11	34	VG	15	bakery	2
I	13	40.6	12	59	E	61	dishroom	3
P	12	37.5	12	52	VG	97	snack bar	3
J	12	37.5	12	32	VG	97	counter server	3
K	15	46.9	12	43	B	43	office	3
L	8	25.0	11	54	B	79	meats	3
M	9	21.9	11	56	E	79	bakery	3
N	9	21.9	11	53	VG	55	salads	4
O	10	31.3	11	53	VG	97	dishroom	4

a The number 12 denotes that the trainee has completed the twelfth grade or above. The number 11 says that the trainee has completed the eleventh grade or less.

b The proficiency ratings are done by the employee's immediate supervisor and reviewed by the Food Service Director. E stands for excellent while VG is very good.

Table 10. Information pertaining to trainees related to pre-test score and number of training replications required for 100 per cent proficiency. Series II.

Test subject	Pre-test score No.	Pre-test score %	Formal education (grade)[a]	Age	Proficiency ratings[b]	No. months on the job	Area of current employment	Replications needed to attain 100% proficiency
A	6	17.1	11	37	E	55	cashier	1
B	13	37.1	12	51	E	26	counter server	1
C	13	37.1	12	56	E	76	salads	1
D	20	57.1	12	52	VG	12	counter server	1
E	10	29.6	12	38	VG	17	snack bar	1
F	23	65.7	11	47	VG	85	vegetables	1
G	22	62.9	11	48	E	67	vegetables	1
H	24	68.6	11	34	VG	15	bakery	1
I	26	74.3	12	59	E	61	dishroom	1
J	16	45.7	12	32	VG	97	counter server	1
K	24	68.6	12	43	E	43	office	1
L	27	77.1	11	54	E	79	meats	1
M	23	65.6	11	56	E	79	bakery	1
N	21	60.0	11	53	VG	55	salads	1
O	9	29.6	11	53	VG	97	snack bar	1
P	24	68.6	12	52	VG	97	snack bar	2

a The number 12 denotes that the trainee has completed the twelfth grade or above. The number 11 says that the trainee has completed the eleventh grade or less.

b The proficiency ratings are done by the employee's immediate supervisor and reviewed by the Food Service Director. E stands for excellent while VG is very good.

APPENDIX B

INTRODUCTORY STATEMENT
TO EMPLOYEES PARTICIPATING IN THE RESEARCH PROJECT

You are here today as a test subject in the research pro-
ject for my master's thesis. Your cooperation is greatly appre-
ciated.

Pre-tests

You will first be asked to take two pre-tests to establish
your eligibility for the program. (Pre-test instructions and
evaluation check lists are included on separate sheets.)

Series I

You are now standing before a machine that will project
slides on the screen to your left and that will play a tape
recording at the same time. The speaker is on the frame above
the machine. I will now turn on both the machine and the speaker.

You are ready to begin the series of slides on setting a
table cover. This cover is for a banquet. You will be given
directions by tape recording on what to do. The volume control
switch can be adjusted if you have any trouble hearing. The
button that you will need to push when asked to change a slide is
identified on the machine with the words "slide change."

When you are ready to start, push the foot control pedal on
the floor. This starts the tape. When you are finished with
the series, you again step on the pedal to stop the tape. After
you complete this series, you will be asked to set a cover on a

separate table away from the machine. You will be scored on items missed. The missed items will be mentioned to you, but not explained or identified except by the word "error."

Series II

You will use the machine to view the slides and listen to the taped instructions as before. The difference will be that the investigator will be seated in front of the machine to represent the banquet guest. The cover as you last set it will be in front of the guest. The guest will push the slide change button for you. You will listen first to the explanation of what the waitress is doing in the series and then you will be told, in orderly steps, to serve as she has shown. You are now ready to view the slides on serving. Press the foot pedal when you are ready to start the tape.

PRE-TESTS

Series I

All items needed for the cover will be on a table in the test room apart from those items used with the slides.

The tester will say:

> Here are items, such as silverware, dishes, and glassware, that you would need to set a cover for the following menu:
>
> Roast Beef
> Whipped Potatoes-Gravy
> Buttered Peas
> Vegetable Bowl-Blue Cheese-French
> Cloverleaf Rolls   Butter
> Cherry Pie
> Coffee   Tea   Milk
>
> Now, set a cover with the silverware, dishes, and glassware that would be on the table before the guests arrive.

The items mentioned are arranged in a random fashion at the left of the test table by the investigator.

Series II

A cover will be set up on a table apart from the training area. This will be the cover the trainee has set for Series I pre-test. The tester will say:

> Pretend there is a guest seated in front of this cover. Please serve that guest in the following order: dinner plate, basket of rolls, and coffee.

Scoring

A check list for each series is used in scoring the pre-tests. A score above 80 per cent would disqualify the individual from participating in the training sessions.

SERIES I

Check List for Setting a Banquet Cover

1. ___ Overall measurement of cover 24" wide by 15" deep.

2. ___ 1" measurement along bottom edge between table's edge and napkin, silver and saucer.

3. ___ Napkin at left of cover 1" up from bottom of cover.

4. ___ Bottom edge of napkin parallel to table's edge.

5. ___ Finished edges of napkin to the right and bottom.

6. ___ Salad fork is parallel to napkin.

7. ___ Salad fork touches napkin at the tines.

8. ___ Dinner fork parallel to salad fork.

9. ___ Base of tines of dinner fork and salad fork touch.

10. ___ Second salad fork parallel to dinner fork.

11. ___ Base of tines of second salad fork and dinner fork touch.

12. ___ 9" measurement between handle of second salad fork and handle of dinner knife.

13. ___ Tines of forks up.

14. ___ Dinner knife parallel to second salad fork.

15. ___ Cutting edge of dinner knife faces toward second salad fork.

16. ___ Teaspoon parallel to dinner knife.

17. ___ Bowl of teaspoon touches blade of knife.

18. ___ Bowl of teaspoon up.

19. ___ Lack of any space between edge of saucer and teaspoon.

20. ___ Saucer placed to right of teaspoon.

21. ___ Cup placed on saucer.

22. ___ Handle of cup on saucer parallel with edge of table.

23. ___ Center of bread and butter plate on a line with dinner fork handle.

24. ___ 1½" measurement between tip of dinner fork and edge of bread and butter plate.

25. ___ Pat of butter drawn on bread and butter plate in lower right position on plate.

26. ___ Salad bowl to right of bread and butter plate.

27. ___ No space between rim of bread and butter plate and salad bowl.

28. ___ Center of salad bowl on line with center of bread and butter plate.

29. ___ Center of salad bowl on a line to divide space left for dinner plate evenly.

30. ___ Water glass to right of salad bowl.

31. ___ Water glass center line passes through center of salad bowl and bread and butter plate.

32. ___ 1" measurement between tip of knife and base of water glass.

A check placed in the space to the right of the number indicates that this item is correct in the table cover by the trainee.

SERIES II

Check List for Serving

Plate Service

1. ___ Waitress picks up plate.

2. ___ Waitress stands behind and a little to the left of guest.

3. ___ Waitress holds plate in left hand.

4. ___ Waitress holds plate so that thumb is not over rim of plate.

5. ___ Waitress turns body to the right.

6. ___ Waitress lowers left arm holding plate.

7. ___ Waitress sets plate down on cover.

8. ___ Plate so positioned on cover that the K-State print is at the top, away from the guest.

9. ___ Waitress did not touch guest as she served.

10. ___ Waitress withdraws left arm.

11. ___ Waitress resumes straightened body position.

12. ___ Waitress steps back away from guest.

13. ___ Waitress turns to walk to right.

Roll Service

14. ___ Waitress picks up roll basket with cover in it.

15. ___ Waitress stands behind and to left of guest.

16. ___ Waitress holds roll basket in left hand.

17. ___ Waitress turns body to right.

18. ___ Waitress extends left arm.

19. ___ Waitress offers roll basket to guest (guest takes basket).

20. ___ Waitress brings arm back close to body.

21. ___ Waitress stands in a straightened position.

22. ___ Waitress steps back away from guest.

23. ___ Waitress turns to walk away to right.

Coffee Service

24. ___ Waitress picks up filled coffee pot.

25. ___ Waitress stands behind and to right of guest.

26. ___ Waitress holds pot of coffee in right hand.

27. ___ Waitress turns her body to the left.

28. ___ Waitress extends right arm holding coffee pot.

29. ___ Waitress pours a cup of coffee.

30. ___ Waitress does not touch guest.

31. ___ Waitress does not spill any coffee.

32. ___ Waitress withdraws right arm.

33. ___ Waitress stands in a straightened position.

34. ___ Waitress steps back from guest.

35. ___ Waitress turns to walk to the right.

A check placed in the space to the right of the number
indicates that this item is correct.

AN EMPLOYEE TRAINING PROCEDURE FOR BANQUET SERVICE

Series I.   Setting a Banquet Place Cover

Slide Number, Title, and Description	Script
No. 1. A banquet table set with eight complete banquet place covers.[a]	This view shows a table set with eight complete individual covers. A cover is defined herein as the plates, silver, glasses, and napkins to be used by one guest and that are placed on the table before he arrives. Notice that careful attention has been given to the placement of each item on the table. The banquet waitresses' aim is to achieve orderly, straight, and aligned covers. You will see a closer view of one of these covers in the next slide.

Change slide. |
| No. 2. A single cover on a linen-covered card table. Arrows and numerals call attention to dimensions. (Plate I) | Here is a closeup view of a cover containing the necessary napkin, silver, plates, and glasses for one guest. The space required for each cover, as indicated by the arrow in the slide, is 24 inches in width by 15 inches deep. This is all the space available for one cover on many banquet tables. The next slide will show the cover guide outline that you see on the table in front of you.

Change slide. |
| No. 3. A cover guide outline placed on a card table. Black arrows at the side and top along with red numerals identify the width and depth of the cover. A salad fork along the bottom of the | You will notice the cover outline that appears on the work table in front of you is exactly like the one now shown in this slide. The solid black line outlines the space allowed for this cover, which is 24 inches wide by 15 |

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[a] Selected slides are included to illustrate the script. Not all of the slides in the series are shown.

PLATE I

Slide No. 2
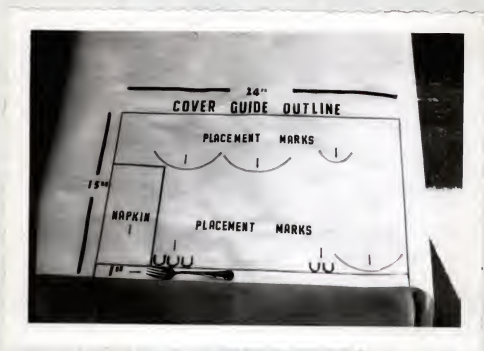
Slide No. 3

outline between the red line and the cover's edge and the numerals 1 inch show that the base of the fork tines occupies 1 inch of space. Small black arrows point to each of the placement marks. The word "napkin" in black letters appears within the napkin outline. (Plate I)

inches deep. The solid red line near the bottom is exactly one inch from the actual edge of the table. All items in the lower section of the cover including the napkin, silver, cup and saucer are placed exactly one inch from the edge of the table. The cover's lower edge is at the table's edge. You can check the one-inch measurement at the bottom of the cover, using the width of a salad fork at the base of the tines which is exactly one inch. One appears on the slide as you would lay it to check the one-inch measurement. You will notice the outline of the napkin in the lower left corner done in green. The napkin may be likened to the cornerstone of a building. It is the cornerstone for the rest of the cover. Notice that it is in the extreme left corner, one inch from the edge of the table. Placement guides for the silver are shown in blue. Placement guides for the saucer in the lower right corner, the bread and butter plate, salad bowl, and glass in the upper section are done in orange. The lower rims of the plates and base of the glass must fit within the orange half circle placement marks.

You will use this outline as a guide to help you lay a complete cover during the following slide sequence. The outline itself will not appear in the following slides.

Change slide.

No. 4. Complete banquet cover on a linen-covered card table. A black line runs directly below the edge of the glass, salad bowl, and bread and butter plate, while a second line begins at the
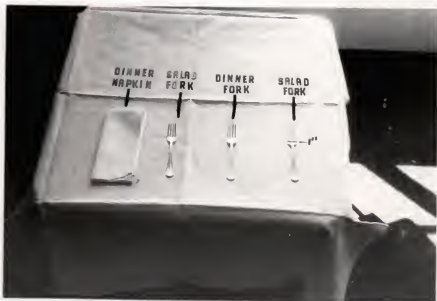
In this slide, you see the cover as if it were divided into three sections, lower left, lower right, and upper. The black lines that appear in the slide are for the sole purpose of giving you an idea of the organization of the

PLATE II

Slide No. 4.

Slide No. 5.

salad bowl just below its center and runs down to the edge of the table. The cover is thus divided into three sections. (Plate II)

No. 5. Lower left section of cover. Each item in the section is identified with its name above it. (Plate II)

No. 6. Placement of dinner napkin. The folded edge of the napkin is to the left while the finished edges are at the right and bottom. An arrow is shown pointing to the folded edge with the words "folded edge" near it. The same emphasis is given to the finished edges. The numeral one inch appears at the left of the napkin. An arrow points out this space between the bottom of the napkin and the table's edge. (Plate III)

cover. The next sequence of slides will deal with the lower left section.

Change slide.

The items in the lower left section of the cover include, from left to right as shown by the labels and arrows, the folded dinner napkin, salad fork, dinner fork, and salad fork.

Change slide.

You are now ready to begin laying the cover. You will find all items needed to the left of your cover outline. Notice in the slide that the napkin is shown as having both folded edges at the top and left plus finished edges at the right and bottom. The finished edge of the napkin is defined as that part where the free edges are brought together. The free edges have a sewn hem. Now place the folded dinner napkin in the lower left hand corner of your outline in the space defined by the green line. Make sure the finished edges are at the right and bottom. Notice that the napkin has now been placed at the lower left-hand corner of the cover flush with the left edge. The bottom of the napkin is parallel to the edge of the table and exactly one inch from the edge of the table. To check this one-inch measurement, now lay the salad fork parallel to the table's edge as it is exactly one inch wide at the base of the tines as shown in the previous slide. You have now correctly placed the napkin and checked its placement. You are ready to place the salad fork, as will be shown in the next slide.

Change slide.

PLATE III

Slide No. 6.

Slide No. 7.

No. 7. Placement of first salad fork. A salad fork is shown next to and touching the napkin. Black tape emphasizes the one inch between the handle of, the fork and the table's edge. An arrow points to the numeral one inch done in red. The word "touching" is to the right and above the fork with an arrow pointing to the spot where the napkin and fork touch. (Plate III)

No. 8. Placement of dinner fork. A dinner fork has been placed directly next to the salad fork. The word "touching" and an arrow point to the base of the tines where the forks touch. The same black tape and one inch numeral are used as in the previous slide to denote the space between the tip of the fork and the table's edge. (Plate IV)

No. 9. Placement of second salad fork. A salad fork has been placed directly to the right of the dinner fork. Again, the arrow and word "touching" point to the base of the tines where the forks touch. The same black line and one inch numeral in red denote the space between the tip of this fork and the table's edge. (Plate IV)

Place one salad fork directly parallel to the finished edge of the napkin so that the end is in the first blue placement mark of the outline in front of you. Be sure and notice the following things: the tines of the fork are up; the tines touch the finished edge of the napkin; the handle tip is exactly one inch from the edge of the table; and the fork is exactly in line with the bottom of the napkin.

Change slide.

Now, place one dinner fork parallel to the salad fork so that the handle end fits in the second blue placement mark of your cover outline. Notice that the tines of this fork are placed in an up position and that the base of the tines of the two forks are touching, as indicated by the arrow in the slide. The handle tip is one inch from the edge of the table and on a direct line with the napkin and the handle tip of the salad fork.

Change slide.

Next, place one salad fork parallel to the dinner fork so that the handle end fits in the third set of blue placement marks on your cover outline. The tines of this fork are also placed in an up position, and they also touch the base of the tines of the dinner fork as shown. The handle tip of the salad fork is exactly one inch from the edge of the table, on a direct line with the bottom edge of the napkin and other two forks.
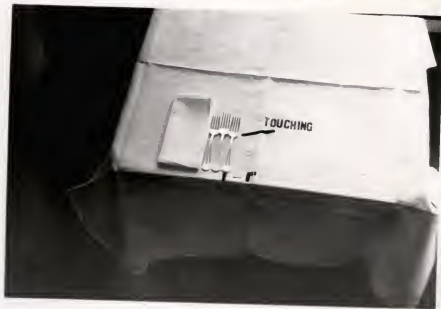
You have now completed the lower left section of the cover. You now go to the lower right section.

Change slide.

PLATE IV

Slide No. 8.

Slide No. 9.

No. 10. Lower right section of the cover. The dinner knife, teaspoon, cup and saucer all have arrows above them, pointing to identifying labels.

No. 11. Placement of the dinner knife. The completed lower left section of the cover is shown. A dinner knife that has been blackened with a felt tip pen has been placed so that the tip of the knife blade touches the last salad fork. The handle tip of this knife touches the handle of a dinner knife in the correct place in the lower right section. The numeral nine inches in red is directly above the blackened knife. The cutting edge of the knife is identified by an arrow and label. A blackened salad fork has been placed parallel to the table's edge so that the base of the tines is directly under the tip of the regular dinner knife handle. The numeral one inch is to the right of this fork handle.

No. 12. Placement of teaspoon. A teaspoon has been placed parallel to the dinner knife. The items placed before remain in place. The word "touching" and a black

The items in the lower right section of the cover include, left to right as shown by the labels and arrows, the dinner knife, teaspoon, cup and saucer. The next slides will show placement of these items in the cover.

Change slide.

Now, place the dinner knife so that the handle end fits in the first blue placement mark at the lower right section of your outline. The knife is parallel to the salad fork. Notice that the cutting edge of the knife, as shown by the arrow in the slide, is turned toward the fork. The distance between the handle of the salad fork and the knife handle is nine inches. You can easily check this distance when you are laying a cover without a guide by the knife itself. The dinner knife is nine inches from the tip of the blade to the tip of the handle. Now, take another dinner knife and place it so that one end touches the knife handle and the other end touches the handle of the salad fork. The black cutout of a knife illustrates this in the slide. The handle tip of the knife is again the prescribed one inch from the edge of the table. A quick check by laying a salad fork parallel with the table's edge will confirm this distance. Remember, as given before, it is exactly one inch across the base of the tines. The black cutout of the fork again shows this handy measurement check.

Change slide.

Next, place the teaspoon so that the handle fits in the blue placement mark to the right of the dinner knife. The teaspoon is now parallel to the knife. The bowl of the spoon is in an up

arrow point to the place where the bowl of the teaspoon touches the blade of the knife. A black tape directly under the teaspoon handle tip and the numeral one inch denote the space between the handle tip and the edge of the table.

No. 13. Placement of cup and saucer. A saucer has been placed next to the teaspoon mentioned in the previous slide. The word "touching" is above the area where the saucer touches the bowl of the teaspoon. The one inch between the bottom edge of the saucer and the table's edge is denoted with tape and the numeral one inch. A cup with the handle parallel to the table edge has been placed on the saucer.

No. 14. Upper section of the cover. Labels and arrows identify the three items in the upper section of the cover. These are the bread and butter plate, salad bowl, and glass.

No. 15. Placement of the bread and butter plate. The bread and butter plate has been centered above the dinner fork at a distance of one and one-half inches. Two short arrows define this space. The numerals one and

position. Notice that the bowl of the spoon touches the blade of the knife. The tip of the spoon handle is again one inch from the edge of the table and on a line with the other silverware and the lower edge of the napkin.

Change slide.

Now, place a saucer to the right of the teaspoon so that the lower rim of the saucer fits within the orange half circle. Notice that there is no space between the rim of the saucer and the bowl of the spoon. The lower rim of the saucer is exactly one inch from the table edge and on a line with the bottom edge of the napkin and the silver. Place a cup in the saucer so that the handle is to the right. The handle should be parallel with the edge of the table, as shown by the arrow in the slide.

You have now completed the lower right section of the cover. The next slides will deal with the upper section.

Change slide.

The upper section of the cover includes left to right, as shown on the slide by labels and arrows, the bread and butter plate, salad bowl, and glass. You will be shown the correct placement of these items in the following slides.

Change slide.

Place the bread and butter plate so that the lower rim of the plate fits within the orange placement mark at the tip of the dinner fork, as shown on the slide. Notice that the center of the plate is directly in line with the handle of the dinner

PLATE V

Slide No. 15.

Slide No. 17.

one-half inches are to the right of the arrows. A straight black line is shown bisecting the bread and butter plate, continuing on through the center of the dinner fork to the table edge. A simulated pat of butter is shown on the plate at the lower right hand side. The space from the base of the tines to the tip of the tines on the left salad fork is blacked in. (Plate V)

No. 16. Placement of the salad bowl. A salad bowl is now at the right of the bread and butter plate. A solid black line passes through the centers of the two dishes. A dotted black line starts at the top of the salad bowl, passes through the center and on to the edge of the table. The line divides the space between the last salad fork and the dinner knife into two equal sections.

No. 17. Placement of the water glass. A glass has been positioned to the right of the salad bowl in the upper section. A solid black tape passes through the centers of the bread and butter plate, salad bowl, and glass. Two short black lines

fork, as shown by the black line in the slide. The distance from the tip of the dinner fork to the rim of the bread and butter plate is one and one-half inches. You can check your placement as you lay a cover without the guide by the distance from the base of the tines of a salad fork to the tip of the tines. This is one and one-half inches. This space is blacked in on the left salad fork in the slide to show that part of the fork meant. Notice, too, that the butter pat is always positioned at the lower right edge of the plate.

Change slide.

Place the salad bowl so that the lower rim fits in the orange placement mark to the right of the bread and butter plate. The center of the salad bowl is now on a direct line with the center of the bread and butter plate, as shown by the short black line across the centers of the two in the slide. The rims of the plates are directly next to each other. Now, direct your attention to the black dotted line that begins at the top of the salad bowl in the slide, passes through the center of the bowl, and continues down to the table edge. The line is equal distance from the salad fork on the left and the dinner knife on the right.

Change slide.

Next, place the water glass so that the base of the glass fits within the last placement mark on the outline. Notice that the center of the glass is on a straight line with the centers of the bread and butter plate and salad bowl, as shown by the black line in the slide. The glass has been placed

emphasize the one-inch distance between the tip of the dinner knife and the base of the glass. A numeral in red for the one inch is placed nearby. (Plate V)

one inch from the tip of the dinner knife and slightly to the right of it. You can check this distance again by the use of the salad fork, remembering that it is exactly one inch across at the base of the tines.

You have now completed laying the cover, as guided by the placement marks on your outline. Helps have been presented to you for use in actual table setting when you do not have an outline to guide you. You have achieved an orderly arrangement wherein each item has a definite position in relation to the others. The following slides will show how this precision in laying one cover shows up in the orderly arrangement of more than one cover together. Each cover is exactly like the others.

Change slide.

No. 18. Two covers with a black line through the centers of each. Two complete covers are shown on a linen-covered tablecloth, as would be set for a banquet. A black tape begins in the middle of the far side of the table, bisects the two covers, and ends at the near side of the table. (Plate VI)

Here you see a card table set with two covers. Notice the alignment between the two as you follow the solid line placed through the center of the top cover as it exactly divides the bottom cover. The next slide will show the same table without the lines.

Change slide.

No. 19. Two covers aligned. The same table just described in the previous slide is now shown without the solid black line. (Plate VI)

This is the same table seen in the previous slide. You are again aware of the orderly arrangement of the two covers in relation to each other. You will see a table set with four covers in the next slide.

Change slide.

No. 20. Four covers with black tapes bisecting each pair. A linen-covered table set with four covers, one to

In this view, you see a table set with four identical covers. Again, follow the lines as they show the perfect alignment between the

PLATE VI

Slide No. 18.

Slide No. 19.

a side, is shown. Two black tapes are used to bisect the covers opposite each other.

No. 21. Four covers on a linen-covered card table. The black tapes have been removed from the table seen in the previous slide.

No. 22. Eight covers with black tapes bisecting each pair. Eight complete covers are shown on a linen-covered banquet table, four to a side. The view is from one end of the table. Four black tapes are used, one each to bisect the two covers opposite each other.

No. 23. Eight covers on a linen-covered banquet table. This slide features the same table set with eight complete covers just described in the preceding number without the solid black lines.

covers opposite each other. The following slide will show the same table without the lines.

Change slide.

Here is the same table set with four covers as just seen in the preceding slide. Again, notice the pleasing effect created by the orderly arrangement of each cover in relation to the others. The next view will show a table set with eight covers.

Change slide.

This is a banquet table set with eight covers. Again, follow the lines as they show the alignment of the covers across from each other. Notice how each line bisects the center of the salad bowls for the two covers directly opposite each other.

Change slide.

This is the same table just seen in the preceding slide, minus the drawn lines.

Notice that each cover in the slide is complete. Careful attention has been given to the correct placement of each item in relation to each other. The same holds true for the relationship between the covers themselves. Each cover becomes the background in which the food is displayed for a guest. When the setting is not correct, attention is drawn away from the food itself.

It is up to the banquet waitress to set the table carefully and correctly so that the table settings will appeal to the guest and help to bring him back again to enjoy yet another meal.

Series II. Service of the Banquet Dinner Plate,
Rolls, and Coffee

Slide Number, Title, and Description

Script

No. 1. Complete banquet cover.
This view features a complete
cover set at one end of a
linen-covered banquet table.
Two vegetables and a meat are
colored in with the use of
felt marker pens, as is the
butter pat and salad greens.

We will be concerned with correct
serving procedures in this series
of slides. Here you see a filled
banquet dinner plate. Notice the
K-State printed at the top. The
plate has been placed on the
cover so that the meat is nearest
the guest and the K-State is at
the top. The following slides
will show the correct procedure
for serving the dinner plate.

Change slide.

No. 2. A silhouette of a
banquet waitress standing
behind and to the left of a
seated guest. The view is
of the backs of the two per-
sons involved. (Plate VII)

In this slide, you see the ban-
quet waitress standing behind and
a little to the left of the
guest. She is holding the filled
dinner plate in her left hand.
Now, pick up the dinner plate
from the items at the left of the
cover. Notice that a meat and
two vegetables have been drawn on
the plate to simulate food.
Stand behind and a little to the
left of the guest seated here at
the table. Make sure you are
holding the plate in your left
hand so that the thumb is not over
the rim of the plate, touching the
surface area.

Change slide.

No. 3. Front view of seated
guest and waitress. The
waitress stands at the left of
the guest. She has her left
arm extended, holding the
dinner plate. (Plate VII)

Here we see the waitress as she
has turned her body slightly to
the right and has begun to lower
her left arm in preparation to
setting down the plate. Move
your body as she has done and
lower your left arm that holds
the dinner plate in a like manner.

Change slide.

PLATE VII

Slide No. 2.

Slide No. 3.

No. 4. Front view of waitress at the left of the guest. The waitress has her arm fully extended as she holds the dinner plate near the point where she will set it down. The body is turned to the right from the original position.

The waitress has just set the plate in front of the guest in the slide. She has positioned her body so that she would not touch the guest as she served the plate. Now, set your plate down in front of the guest, making sure that the K-State is at the top and the meat nearest the guest.

Change slide.

No. 5. Waitress with left arm withdrawn. In this front view, the waitress is shown with her body turned to the right. The left arm is bent close to the body. The head and shoulders of the guest are shown.

The waitress has withdrawn her left arm. Her body is now in a straightened position. Move your arm back to your side and resume a straightened position.

Change slide.

No. 6. Waitress turned to the right. The waitress is shown slightly behind the guest in this front view. The waitress has turned to walk to the right of the guest whose head and shoulders are shown.

The waitress has stepped back from the guest. She has turned so that she can proceed to the next guest. Now, you step back from the guest in front of you and turn as if to walk to the right.

You have now completed the correct sequence of steps for serving a dinner plate. The next slides will deal with the service of dinner rolls.

Change slide.

No. 7. Waitress holding roll basket. This is a silhouette shot in which the waitress is shown holding a roll basket in her left hand as she stands behind and to the left of the guest. This is a back view of the two involved.

Here we see the banquet waitress standing behind and slightly to the left of the guest. She is holding a roll basket in her left hand that has a napkin folded over the rolls in it.

Pick up the roll basket fitted with a napkin liner from the items at the left of the cover. Stand behind and a little to the left of the guest seated at the

table. Hold the roll basket in
the left hand as the waitress is
doing.

Change slide.

No. 8. Waitress offering roll
basket. The waitress has
turned her body to the right
in this front view. She has
extended her left arm to offer
the roll basket to the guest.

You see now that the waitress
has turned her body slightly to
the right and has extended her
left arm to offer the roll basket
to the guest. Turn your body
slightly to the right, extend
your left arm holding the roll
basket, and offer the basket to
the guest. The guest will take
the roll basket from you and will
pass it along to the other
guests.

Change slide.

No. 9. Waitress standing with
left arm close to body. The
waitress has brought her arm
back close to her body so that
her forearm is parallel to the
floor. The guest now has the
roll basket and is selecting
a roll.

In this view, the waitress has
brought her arm back close to
her body. She is again standing
in a straightened position. Now,
bring your arm back close to your
body and again stand in a
straightened position as she has
done.

Change slide.

No. 10. Waitress turned to
walk to the right. The wait-
ress is shown behind the guest.
She has stepped back from the
guest and will go to the right.
The guest, in this front view,
is shown placing a roll on the
bread and butter plate.

The waitress has stepped back and
has turned to the right to walk
away. Step back from the guest
and turn as if to walk away.

You have now completed the pro-
cedure for offering the roll
basket to the guest. The next
slides will feature the service
of coffee.

Change slide.

No. 11. Waitress holding a
filled coffee pot. This sil-
houette back view shows the
banquet waitress slightly
behind and to the right of the
seated guest. The waitress

The banquet waitress is now
standing behind the guest and
slightly to the right in the
slide. She is holding a pot of
coffee in her right hand. Pick
up the filled coffee pot from

holds a filled coffee pot in the right hand.

the items to the left of the cover. Stand behind and slightly to the right of the seated guest. Hold the coffee pot in the right hand.

Change slide.

No. 12. Waitress with right arm extended. This front view shows that the waitress has turned her body to the left and has the right arm holding the coffee pot extended. The guest is shown.

In this slide, we see that the waitress has turned her body slightly to the left and has extended her arm holding the coffee pot. Turn your body to the left and extend your right arm as she has done.

Change slide.

No. 13. Waitress pouring coffee. The waitress is shown pouring coffee for the guest in this front view. (Plate VIII)

The waitress has lowered her right arm and is pouring the coffee. Her body is correctly positioned, so that she will not touch the guest nor spill coffee on him. Now lower your right arm and pour a cup of coffee as the waitress has shown in the slide.

Change slide.

No. 14. Waitress with arm holding coffee pot withdrawn from guest. The waitress has resumed a straightened position to the right of the guest.

The waitress has withdrawn her arm and again stands in a straight position. Withdraw your arm and stand in a straightened position.

Change slide.

No. 15. Waitress back from guest. The waitress has stepped back so that she can walk to the right of the guest. The waitress holds the filled coffee pot in her right hand. (Plate VIII)

The waitress has stepped back from the guest and has turned to walk to the right. Step back from the guest in front of you and turn as if to walk to the right.

Replace the coffee pot to the left of the cover where you picked it up. You have now completed the service of coffee.

PLATE VIII

Slide No. 13.

Slide No. 15.

DEVELOPMENT AND EVALUATION OF AN AUDIO-VISUAL
TRAINING PROCEDURE FOR FOOD SERVICE EMPLOYEES

by

NADINE LILLIAN APLEY

B. S., Kansas State University,
Manhattan, Kansas, 1961

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Labor is a major expenditure in food service organizations, representing 25 to 50 per cent of the budget. As a result, the employer is faced with the problem of training competent, efficient employees with minimum expenditure of time and money. A good training program is an important factor in controlling labor costs.

Automated instruction, in which material is presented in small, easily understood steps through an auto-instructional device, is one approach to the training problem. Repetitive, routine tasks within a food service lend themselves to this type of training.

An audio-visual training procedure was developed for food service employees at the K-State Union. A script was developed and recorded on tape, and colored 35 mm. slides were taken to illustrate the steps in the procedure. The program was divided into two units. Series I, Setting an Individual Place Cover for a Banquet, stressed spatial relationships between objects placed on the cover. Series II, Serving the Banquet Dinner Plate, Rolls, and Coffee, emphasized body position and movements.

A portable Videosonic audio-visual machine equipped with a daylight screen for viewing demonstration slides, an automatic slide changer, and an audio system that utilized a tape to convey oral instructions was used for presentation of the procedure. A cover guide outline on the work table in front of the trainee facilitated participation in guided practice by enabling her to hear instructions, see the demonstration slide, and practice the

procedure at the same time. Sixteen untrained workers acceptable for banquet service were selected for the study from current K-State Union food service employees.

A pre-test covering material in Series I was given each trainee, followed by a brief project explanation and instruction in use of the machine. The employee then listened to tape-recorded instructions, viewed demonstration slides, and placed articles on the cover guide outline as directed. After each viewing, the trainee was asked to set a test cover. Performance was measured by means of a check list. When 100 per cent efficiency was reached, Series II training and testing was begun. Retention of information was checked at the end of one day, one week, and two weeks for both series.

Of the 16 trainees in the study, one achieved 100 per cent efficiency after the initial viewing of the Series I slides, seven trainees required two replications, six needed three replications, while the remaining two trainees required four replications. Tasks requiring placement of objects a specific distance from one another proved more difficult than those relating to the way an object was positioned on the cover.

Training time per response learned during all replications in Series I ranged from 34 to 147 seconds for an average of 99.2. Fifteen of the 32 items in Series I were retained for the two-week retention testing period. No less than 80 per cent of the trainees recalled all other items. Average recall at the end of one day was 96.5 per cent, 96.3 at the end of one week, and 92.8 at the end of two weeks.

Fifteen of the 16 trainees achieved 100 per cent efficiency following initial viewing of Series II slides. One trainee required two replications. Average training time per response learned in Series II ranged from 10 to 92 seconds for an average of 25.3. Twenty-nine of the 35 items were retained. All other items were recalled by at least 90 per cent of the trainees.

Employees reacted favorably to the training procedure and evidenced pride in being chosen to participate. On the basis of this study, audio-visual presentation combined with guided practice appears to merit consideration as a training technique for the food service industry.